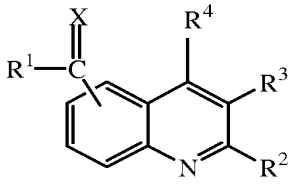
This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A radiolabelled compound according to Formula (I-A)*

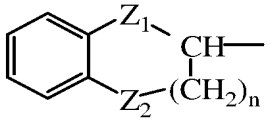


(I-A)*

an *N*-oxide form, a pharmaceutically acceptable addition salt, a quaternary amine and a stereochemically isomeric form thereof, wherein

X represents O;

R^1 represents C_{1-6}alkyl; aryl; thienyl; quinolinyl; cycloC_{3-12}alkyl or (cycloC_{3-12}alkyl)C_{1-6}alkyl, wherein the cycloC_{3-12}alkyl moiety optionally may contain a double bond and wherein one carbon atom in the cycloC_{3-12}alkyl moiety may be replaced by an oxygen atom or an NR^8-moiety with R^8 being hydrogen, benzyl or C_{1-6}alkyloxycarbonyl ; wherein one or more hydrogen atoms in a C_{1-6}alkyl-moiety or in a cycloC_{3-12}alkyl-moiety optionally may be replaced by C_{1-6}alkyl, hydroxyC_{1-6}alkyl, haloC_{1-6}alkyl, aminoC_{1-6}alkyl, hydroxy, C_{1-6}alkyloxy, arylC_{1-6}alkyloxy, halo, C_{1-6}alkyloxycarbonyl, aryl, amino, mono– or di(C_{1-6}alkyl)amino, C_{1-6}alkyloxycarbonylamino, halo, piperazinyl, pyridinyl, morpholinyl, thienyl or a bivalent radical of formula –O-, -O-CH_2-O or –O-CH_2-CH_2-O-;
or a radical of formula (a-1)



a-1

wherein Z_1 is a single covalent bond, O, NH or CH_2;
Z_2 is a single covalent bond, O, NH or CH_2;
n is an integer of 0, 1, 2 or 3;

and wherein each hydrogen atom in the phenyl ring independently may optionally be replaced by halo, hydroxy, C_{1-6}alkyl, C_{1-6}alkyloxy or hydroxyC_{1-6}alkyl;

R^2 represents hydrogen; halo; cyano; C_{1-6}alkyl; C_{1-6}alkyloxy; C_{1-6}alkylthio; C_{1-6}alkylcarbonyl; C_{1-6}alkyloxycarbonyl; C_{1-6}alkylcarbonyloxyC_{1-6}alkyl; C_{2-6}alkenyl; hydroxyC_{2-6}alkenyl; C_{2-6}alkynyl; hydroxyC_{2-6}alkynyl; tri(C_{1-6}alkyl)silaneC_{2-6}alkynyl; ~~amino;~~ mono– or di(C_{1-6}alkyl)amino; mono– or di(C_{1-6}alkyloxyC_{1-6}alkyl)amino; mono– or di(C_{1-6}alkylthioC_{1-6}alkyl)amino; aryl; arylC_{1-6}alkyl; arylC_{2-6}alkynyl; C_{1-6}alkyloxyC_{1-6}alkylaminoC_{1-6}alkyl; aminocarbonyl optionally substituted with C_{1-6}alkyl, C_{1-6}alkyloxyC_{1-6}alkyl, C_{1-6}alkyloxycarbonylC_{1-6}alkyl or pyridinylC_{1-6}alkyl;
a heterocycle selected from thienyl, furanyl, pyrrolyl, thiazolyl, oxazolyl, imidazolyl, isothiazolyl, isoxazolyl, pyrazolyl, pyridyl, pyrazinyl, pyridazinyl, pyrimidinyl, piperidinyl and piperazinyl, optionally N-substituted with C_{1-6}alkyloxyC_{1-6}alkyl, morpholinyl, thiomorpholinyl, dioxanyl or dithianyl ;
a radical –NH-C(=O)R^9 wherein R^9 represents
C_{1-6}alkyl optionally substituted with cycloC_{3-12}alkyl, C_{1-6}alkyloxy, C_{1-6}alkyloxycarbonyl, aryl, aryloxy, thienyl, pyridinyl, mono- or di(C_{1-6}alkyl)amino, C_{1-6}alkylthio, benzylthio, pyridinylthio or pyrimidinylthio; cycloC_{3-12}alkyl; cyclohexenyl; amino; arylcycloC_{3-12}alkylamino; mono-or-di(C_{1-6}alkyl)amino; mono- or di(C_{1-6}alkyloxycarbonylC_{1-6}alkyl)amino; mono- or di(C_{1-6}alkyloxycarbonyl)amino; mono-or di(C_{2-6}alkenyl)amino; mono- or di(arylC_{1-6}alkyl)amino; mono- or diarylamino; arylC_{2-6}alkenyl; furanylC_{2-6}alkenyl; piperididinyl; piperazinyl; indolyl; furyl; benzofuryl; tetrahydrofuryl; indenyl; adamantyl; pyridinyl; pyrazinyl; aryl; arylC_{1-6}alkylthio or a radical of formula (a-1) ;

a sulfonamid -NH-SO_2-R^{10} wherein R^{10} represents C_{1-6}alkyl, mono- or poly haloC_{1-6}alkyl, arylC_{1-6}alkyl, arylC_{2-6}alkenyl, aryl, quinolinyl, isoxazolyl or di(C_{1-6}alkyl)amino;

R^3 ~~and R^4 each independently represent~~ **is** hydrogen; halo; hydroxy; cyano; C_{1-6}alkyl; C_{1-6}alkyloxy; C_{1-6}alkyloxyC_{1-6}alkyl; C_{1-6}alkylcarbonyl; C_{1-6}alkyloxycarbonyl; C_{2-6}alkenyl; hydroxyC_{2-6}alkenyl; C_{2-6}alkynyl; hydroxyC_{2-6}alkynyl; tri(C_{1-6}alkyl)silaneC_{2-6}alkynyl; ~~amino;~~ mono– or di(C_{1-6}alkyl)amino; mono– or di(C_{1-

$_6$alkyloxyC_{1-6}alkyl)amino; mono– or di(C_{1-6}alkylthioC_{1-6}alkyl)amino; aryl; morpholinylC_{1-6}alkyl or piperidinylC_{1-6}alkyl ;

R^4 is hydrogen; halo; hydroxy; cyano; C_{1-6}alkyl; C_{1-6}alkyloxy; C_{1-6}alkyloxyC_{1-6}alkyl; C_{1-6}alkylcarbonyl; C_{1-6}alkyloxycarbonyl; C_{2-6}alkenyl; hydroxyC_{2-6}alkenyl; C_{2-6}alkynyl; hydroxyC_{2-6}alkynyl; tri(C_{1-6}alkyl)silaneC_{2-6}alkynyl; amino; mono– or di(C_{1-6}alkyl)amino; mono– or di(C_{1-6}alkyloxyC_{1-6}alkyl)amino; mono– or di(C_{1-6}alkylthioC_{1-6}alkyl)amino; aryl; morpholinylC_{1-6}alkyl or piperidinylC_{1-6}alkyl ;or

R^2 and R^3 may be taken together to form $–R^2-R^3-$, which represents a bivalent radical of formula $–(CH_2)_3-$, $–(CH_2)_4-$, $–(CH_2)_5-$, $–(CH_2)_6-$, –CH=CH-CH=CH-, $–Z_4$-CH=CH-, -CH=CH-Z_4-, $–Z_4-CH_2-CH_2-CH_2-$, $-CH_2-Z_4-CH_2-CH_2-$, $-CH_2-CH_2-Z_4-CH_2-$, $-CH_2-CH_2-CH_2-Z_4-$, $-Z_4-CH_2-CH_2-$, $-CH_2-Z_4-CH_2-$ or $-CH_2-CH_2-Z_4-$, with Z_4 being O, S, SO_2 or NR^{11} wherein R^{11} is hydrogen, C_{1-6}alkyl, benzyl or C_{1-6}alkyloxycarbonyl; and wherein each bivalent radical is optionally substituted with C_{1-6}alkyl.

or R^3 and R^4 may be taken together to form a bivalent radical of formula -CH=CH-CH=CH- or $–CH_2-CH_2-CH_2-CH_2-$;

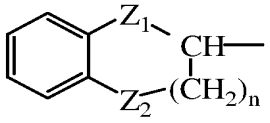
aryl represents phenyl or naphthyl optionally substituted with one or more substituents selected from halo, hydroxy, C_{1-6}alkyl, C_{1-6}alkyloxy, phenyloxy, nitro, amino, thio, C_{1-6}alkylthio, haloC_{1-6}alkyl, polyhaloC_{1-6}alkyl, polyhaloC_{1-6}alkyloxy, hydroxyC_{1-6}alkyl, C_{1-6}alkyloxyC_{1-6}alkyl, aminoC_{1-6}alkyl, mono-or di(C_{1-6}alkyl)amino; mono-or di(C_{1-6}alkyl)aminoC_{1-6}alkyl, cyano, $-CO-R^{12}$, $-CO-OR^{13}$, $-NR^{13}SO_2R^{12}$, $-SO_2-NR^{13}R^{14}$, $-NR^{13}C(O)R^{12}$, $-C(O)NR^{13}R^{14}$, $-SOR^{12}$, $-SO_2R^{12}$; wherein each R^{12}, R^{13} and R^{14} independently represent C_{1-6}alkyl; cycloC_{3-6}alkyl; phenyl; phenyl substituted with halo, hydroxy, C_{1-6}alkyl, C_{1-6}alkyloxy, haloC_{1-6}alkyl, polyhaloC_{1-6}alkyl, furanyl, thienyl, pyrrolyl, imidazolyl, thiazolyl or oxazolyl;

and when the R^1-C(=X) moiety is linked to another position than the 7 or 8 position, then said 7 and 8 position may be substituted with R^{15} and R^{16} wherein either one or both of R^{15} and R^{16} represents C_{1-6}alkyl, C_{1-6}alkyloxy or R^{15} and R^{16} taken together may form a bivalent radical of formula -CH=CH-CH=CH-; wherein the radiolabelled compound has at least one halo which is a radioactive isotope of iodine, bromine, or fluorine, at least one ^{11}C atom, or at least one tritium atom.

2. (Currently Amended) The radiolabelled compound according to claim 1, wherein

X represents O;

R^1 represents C_{1-6}alkyl, aryl; thienyl; quinolinyl; cycloC_{3-12}alkyl or (cycloC_{3-12}alkyl)C_{1-6}alkyl, wherein the cycloC_{3-12}alkyl moiety optionally may contain a double bond and wherein one carbon atom in the cycloC_{3-12}alkyl moiety may be replaced by an oxygen atom or an NR^8-moiety with R^8 being benzyl or C_{1-6}alkyloxycarbonyl ; wherein one or more hydrogen atoms in a C_{1-6}alkyl-moiety or in a cycloC_{3-12}alkyl-moiety optionally may be replaced by C_{1-6}alkyl, haloC_{1-6}alkyl, hydroxy, C_{1-6}alkyloxy, arylC_{1-6}alkyloxy, halo, aryl, mono– or di(C_{1-6}alkyl)amino, C_{1-6}alkyloxycarbonylamino, halo, piperazinyl, pyridinyl, morpholinyl, thienyl or a bivalent radical of formula –O- or -O-CH_2-CH_2-O-;
or a radical of formula (a-1)



a-1

wherein Z_1 is a single covalent bond, O or CH_2;
Z_2 is a single covalent bond, O or CH_2;
n is an integer of 0, 1, or 2 ;
and wherein each hydrogen atom in the phenyl ring independently may optionally be replaced by halo or hydroxy;

R^2 represents hydrogen; halo; cyano; C_{1-6}alkyl; C_{1-6}alkyloxy; C_{1-6}alkylthio; C_{1-6}alkylcarbonyl; C_{1-6}alkyloxycarbonyl; C_{2-6}alkenyl; hydroxyC_{2-6}alkenyl; C_{2-6}alkynyl; hydroxyC_{2-6}alkynyl; tri(C_{1-6}alkyl)silaneC_{2-6}alkynyl; ~~amino;~~ mono– or di(C_{1-6}alkyl)amino; mono– or di(C_{1-6}alkyloxyC_{1-6}alkyl)amino; mono– or di(C_{1-6}alkylthioC_{1-6}alkyl)amino; aryl; arylC_{1-6}alkyl; arylC_{2-6}alkynyl; C_{1-6}alkyloxyC_{1-6}alkylaminoC_{1-6}alkyl; aminocarbonyl optionally substituted with C_{1-6}alkyloxycarbonylC_{1-6}alkyl ; a heterocycle selected from thienyl, furanyl, thiazolyl and piperidinyl, optionally N-substituted with morpholinyl or thiomorpholinyl; a radical –NH-C(=O)R^9 wherein R^9 represents C_{1-6}alkyl optionally substituted with cycloC_{3-12}alkyl, C_{1-6}alkyloxy, C_{1-6}alkyloxycarbonyl, aryl, aryloxy, thienyl, pyridinyl, mono- or di(C_{1-6}alkyl)amino, C_{1-6}alkylthio, benzylthio, pyridinylthio or pyrimidinylthio; cycloC_{3-12}alkyl; cyclohexenyl; amino; arylcycloC_{3-12}alkylamino; mono-or-di(C_{1-6}alkyl)amino; mono- or di(C_{1-6}alkyloxycarbonylC_{1-6}alkyl)amino; mono- or di(C_{1-6}alkyloxycarbonyl)amino; mono-or di(C_{2-6}alkenyl)amino; mono- or di(arylC_{1-6}alkyl)amino; mono- or diarylamino; arylC_{2-6}alkenyl; furanylC_{2-6}alkenyl; piperididinyl; piperazinyl; indolyl; furyl; benzofuryl;

tetrahydrofuryl; indenyl; adamantyl; pyridinyl; pyrazinyl; aryl or a radical of formula (a-1) ; a sulfonamid -NH-SO_2-R^{10} wherein R^{10} represents C_{1-6}alkyl, mono- or poly haloC_{1-6}alkyl, arylC_{1-6}alkyl or aryl;

R^3 and R^4 each independently represent hydrogen; C_{1-6}alkyl; C_{1-6}alkyloxyC_{1-6}alkyl; C_{1-6}alkyloxycarbonyl; or

R^2 and R^3 may be taken together to form –R^2-R^3-, which represents a bivalent radical of formula –$(CH_2)_4$-, –$(CH_2)_5$-, –Z_4-CH=CH-, –Z_4-CH_2-CH_2-CH_2- or -Z_4-CH_2-CH_2-, with Z_4 being O, S, SO_2 or NR^{11} wherein R^{11} is hydrogen, C_{1-6}alkyl, benzyl or C_{1-6}alkyloxycarbonyl; and wherein each bivalent radical is optionally substituted with C_{1-6}alkyl;

or R^3 and R^4 may be taken together to form a bivalent radical of formula -CH=CH-CH=CH- or –CH_2-CH_2-CH_2-CH_2- ;

aryl represents phenyl or naphthyl optionally substituted with one or more substituents selected from halo, C_{1-6}alkyloxy, phenyloxy, mono-or di(C_{1-6}alkyl)amino and cyano;

and when the R^1-C(=X) moiety is linked to another position than the 7 or 8 position, then said 7 and 8 position may be substituted with R^{15} and R^{16} wherein either one or both of R^{15} and R^{16} represents C_{1-6}alkyl or R^{15} and R^{16} taken together may form a bivalent radical of formula -CH=CH-CH=CH-.

3. (Previously Presented) The radiolabelled compound according to claim 1, wherein,

X represents O;

R^1 represents C_{1-6}alkyl; cycloC_{3-12}alkyl or (cycloC_{3-12}alkyl)C_{1-6}alkyl, wherein one or more hydrogen atoms in a C_{1-6}alkyl-moiety or in a cycloC_{3-12}alkyl-moiety optionally may be replaced by C_{1-6}alkyloxy, aryl, halo or thienyl;

R^2 represents hydrogen; halo; C_{1-6}alkyl or amino;

R^3 and R^4 each independently represent hydrogen or C_{1-6}alkyl; or

R^2 and R^3 may be taken together to form –R^2-R^3-, which represents a bivalent radical of formula –Z_4-CH_2-CH_2-CH_2- or -Z_4-CH_2-CH_2- with Z_4 being O or NR^{11} wherein R^{11} is C_{1-6}alkyl; and wherein each bivalent radical is optionally substituted with C_{1-6}alkyl;

or R^3 and R^4 may be taken together to form a bivalent radical of formula -CH_2-CH_2-CH_2-CH_2- ;

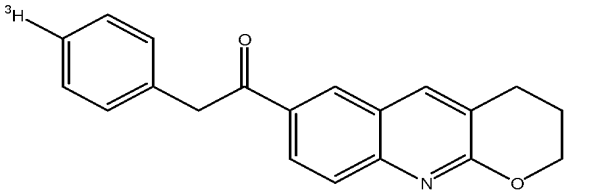
aryl represents phenyl optionally substituted with halo.

4. (Previously Presented) The radiolabelled compound according to claim 1, wherein, the R^1-C(=X) moiety is linked to the quinoline moiety in position 6.

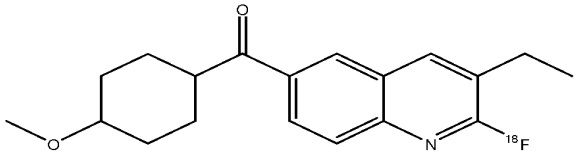
5. (Canceled)

6. (Previously Presented) The radiolabelled compound according to claim 1, wherein the radioactive isotope is ^{3}H, ^{11}C or ^{18}F.

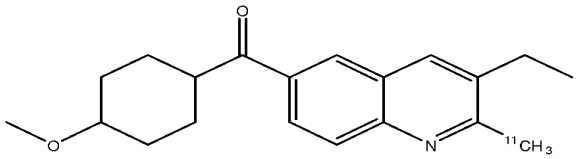
7. (Previously Presented) The radiolabelled compound according to claim 6, wherein the compound is any one of compounds (a), (b), (c), (d) and (e):



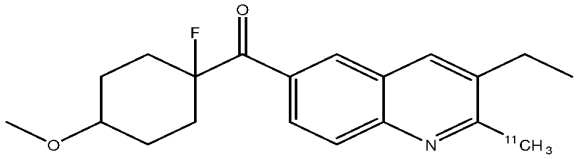
(a)



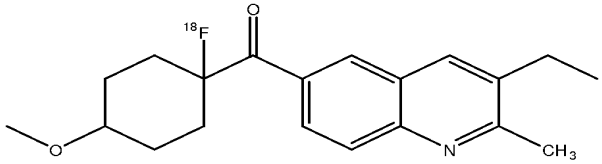
(b)



(c)



(d)



(e)

8. (Previously Presented) The radiolabelled compound according to claim 7, wherein the compound is compound (a).

9. (Previously Presented) A radioactive composition for administration to mammals for marking or identifying an mGlu1 receptor comprising a radiolabelled compound according to claim 1 and a pharmaceutically acceptable carrier or diluent.

10. (Canceled)

11. (Currently Amended) A diagnostic method for [[an]] detecting the presence of a mGlu1 receptor comprising

administering a radiolabelled compound according to claim 1 to biological material; and

detecting emissions from the radiolabelled compound.

12. (Canceled)

13. (Previously Presented) The method of claim 11 further comprising screening a test compound for the ability to occupy or bind to a mGlu1 receptor in the biological material.

14. (Previously Presented) The method of claim 11 wherein the biological material is a tissue sample, plasma fluid, body fluid, body part from a warm-blooded animal, or organ from a warm-blooded animal.

15. (Previously Presented) A diagnostic tool for marking or identifying an mGlu1 receptor in biological material, said tool comprising a radiolabelled compound according to claim 1.

16. (Canceled)

17. (Previously Presented) A diagnostic tool for screening whether a test compound has the ability to occupy or bind to a mGlu1 receptor in biological material, said diagnostic tool comprising a radiolabelled compound according to claim 1.

18. (Previously Presented) A method for imaging an organ comprising the steps of

(a) administering a sufficient amount of a compound according to claim 1 to the organ; and

(b) detecting the emissions from the radioactive compound.

19. (Previously Presented) The method of claim 18 wherein the compound is administered *in vivo*.

20. (Previously Presented) The method of claim 18 wherein the compound is administered *in vitro*.

21. (Previously Presented) The method of claim 18 wherein the emissions are detected using Single Photon Emission Computed Tomography or Positron Emission Tomography.

22. (Previously Presented) The method of claim 18 wherein the organ is a brain.

23. (Previously Presented) A method for marking an mGlu1 receptor comprising the steps of
    (a) administering a compound according to claim 1 to biological material; and
    (b) detecting the emissions from the radioactive compound.

24. (Previously Presented) The method of claim 23 wherein the compound is administered *in vivo*.

25. (Previously Presented) The method of claim 23 wherein the compound is administered *in vitro*.

26. (Previously Presented) The method of claim 23 wherein the emissions are detected using Single Photon Emission Computed Tomography or Positron Emission Tomography.

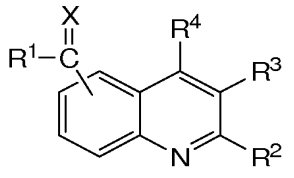
27. (Previously Presented) The method of claim 23 wherein the biological material is a tissue sample, plasma fluid, body fluid, body part from a warm-blooded animal, or organ from a warm-blooded animal.

28. (Previously Presented) A method of screening whether a test compound occupies or binds to an mGlu1 receptor in biological material comprising:
    (a) administering a compound according to claim 1 to biological material;
    (b) administering the test compound to the biological material; and
    (c) detecting the emissions from the radioactive compound.

29. (Currently Amended) The method of claim 28 wherein the emissions are detected using Single Photon Emission ~~Computered~~Computed Tomography or Positron Emission Tomography.

30. (Previously Presented) The method of claim 28 wherein the biological material is a tissue sample, plasma fluid, body fluid, body part from a warm-blooded animal, or organ from a warm-blooded animal.

31. (Currently Amended) A method for marking an mGlu1 receptor comprising the steps of
(a) radiolabelling a compound according to Formula (I-A)

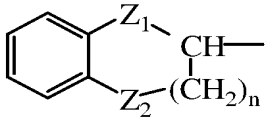


(I-A)

an *N*-oxide form, a pharmaceutically acceptable addition salt, a quaternary amine or a stereochemically isomeric form thereof, wherein

X represents O;

R^1 represents C_{1-6}alkyl; aryl; thienyl; quinolinyl; cycloC_{3-12}alkyl or (cycloC_{3-12}alkyl)C_{1-6}alkyl, wherein the cycloC_{3-12}alkyl moiety optionally may contain a double bond and wherein one carbon atom in the cycloC_{3-12}alkyl moiety may be replaced by an oxygen atom or an NR^8-moiety with R^8 being hydrogen, benzyl or C_{1-6}alkyloxycarbonyl ; wherein one or more hydrogen atoms in a C_{1-6}alkyl-moiety or in a cycloC_{3-12}alkyl-moiety optionally may be replaced by C_{1-6}alkyl, hydroxyC_{1-6}alkyl, haloC_{1-6}alkyl, aminoC_{1-6}alkyl, hydroxy, C_{1-6}alkyloxy, arylC_{1-6}alkyloxy, halo, C_{1-6}alkyloxycarbonyl, aryl, amino, mono– or di(C_{1-6}alkyl)amino, C_{1-6}alkyloxycarbonylamino, halo, piperazinyl, pyridinyl, morpholinyl, thienyl or a bivalent radical of formula –O-, -O-CH_2-O or –O-CH_2-CH_2-O-;
or a radical of formula (a-1)



a-1

wherein Z_1 is a single covalent bond, O, NH or CH_2;
Z_2 is a single covalent bond, O, NH or CH_2;
n is an integer of 0, 1, 2 or 3;

and wherein each hydrogen atom in the phenyl ring independently may optionally be replaced by halo, hydroxy, C_{1-6}alkyl, C_{1-6}alkyloxy or hydroxyC_{1-6}alkyl;

R^2 represents hydrogen; halo; cyano; C_{1-6}alkyl; C_{1-6}alkyloxy; C_{1-6}alkylthio; C_{1-6}alkylcarbonyl; C_{1-6}alkyloxycarbonyl; C_{1-6}alkylcarbonyloxyC_{1-6}alkyl; C_{2-6}alkenyl; hydroxyC_{2-6}alkenyl; C_{2-6}alkynyl; hydroxyC_{2-6}alkynyl; tri(C_{1-6}alkyl)silaneC_{2-6}alkynyl; ~~amino;~~ mono– or di(C_{1-6}alkyl)amino; mono– or di(C_{1-6}alkyloxyC_{1-6}alkyl)amino; mono– or di(C_{1-6}alkylthioC_{1-6}alkyl)amino; aryl; arylC_{1-6}alkyl; arylC_{2-6}alkynyl; C_{1-6}alkyloxyC_{1-6}alkylaminoC_{1-6}alkyl; aminocarbonyl optionally substituted with C_{1-6}alkyl, C_{1-6}alkyloxyC_{1-6}alkyl, C_{1-6}alkyloxycarbonylC_{1-6}alkyl or pyridinylC_{1-6}alkyl; a heterocycle selected from thienyl, furanyl, pyrrolyl, thiazolyl, oxazolyl, imidazolyl, isothiazolyl, isoxazolyl, pyrazolyl, pyridyl, pyrazinyl, pyridazinyl, pyrimidinyl, piperidinyl and piperazinyl, optionally N-substituted with C_{1-6}alkyloxyC_{1-6}alkyl, morpholinyl, thiomorpholinyl, dioxanyl or dithianyl ;

a radical –NH-C(=O)R^9 wherein R^9 represents

C_{1-6}alkyl optionally substituted with cycloC_{3-12}alkyl, C_{1-6}alkyloxy, C_{1-6}alkyloxycarbonyl, aryl, aryloxy, thienyl, pyridinyl, mono- or di(C_{1-6}alkyl)amino, C_{1-6}alkylthio, benzylthio, pyridinylthio or pyrimidinylthio; cycloC_{3-12}alkyl; cyclohexenyl; amino; arylcycloC_{3-12}alkylamino; mono-or-di(C_{1-6}alkyl)amino; mono- or di(C_{1-6}alkyloxycarbonylC_{1-6}alkyl)amino; mono- or di(C_{1-6}alkyloxycarbonyl)amino; mono-or di(C_{2-6}alkenyl)amino; mono- or di(arylC_{1-6}alkyl)amino; mono- or diarylamino; arylC_{2-6}alkenyl; furanylC_{2-6}alkenyl; piperididinyl; piperazinyl; indolyl; furyl; benzofuryl; tetrahydrofuryl; indenyl; adamantyl; pyridinyl; pyrazinyl; aryl; arylC_{1-6}alkylthio or a radical of formula (a-1) ;

a sulfonamid -NH-SO_2-R^{10} wherein R^{10} represents C_{1-6}alkyl, mono- or poly haloC_{1-6}alkyl, arylC_{1-6}alkyl, arylC_{2-6}alkenyl, aryl, quinolinyl, isoxazolyl or di(C_{1-6}alkyl)amino;

R^3 ~~and R^4 each independently represent~~ **is** hydrogen; halo; hydroxy; cyano; C_{1-6}alkyl; C_{1-6}alkyloxy; C_{1-6}alkyloxyC_{1-6}alkyl; C_{1-6}alkylcarbonyl; C_{1-6}alkyloxycarbonyl; C_{2-6}alkenyl; hydroxyC_{2-6}alkenyl; C_{2-6}alkynyl; hydroxyC_{2-6}alkynyl; tri(C_{1-6}alkyl)silaneC_{2-6}alkynyl; ~~amino;~~ mono– or di(C_{1-6}alkyl)amino; mono– or di(C_{1-}

$_6$alkyloxyC_{1-6}alkyl)amino; mono– or di(C_{1-6}alkylthioC_{1-6}alkyl)amino; aryl; morpholinylC_{1-6}alkyl or piperidinylC_{1-6}alkyl ;

R^4 is hydrogen; halo; hydroxy; cyano; C_{1-6}alkyl; C_{1-6}alkyloxy; C_{1-6}alkyloxyC_{1-6}alkyl; C_{1-6}alkylcarbonyl; C_{1-6}alkyloxycarbonyl; C_{2-6}alkenyl; hydroxyC_{2-6}alkenyl; C_{2-6}alkynyl; hydroxyC_{2-6}alkynyl; tri(C_{1-6}alkyl)silaneC_{2-6}alkynyl; amino; mono– or di(C_{1-6}alkyl)amino; mono– or di(C_{1-6}alkyloxyC_{1-6}alkyl)amino; mono– or di(C_{1-6}alkylthioC_{1-6}alkyl)amino; aryl; morpholinylC_{1-6}alkyl or piperidinylC_{1-6}alkyl ;or

R^2 and R^3 may be taken together to form $–R^2$-R^3-, which represents a bivalent radical of formula $–(CH_2)_3$-, $–(CH_2)_4$-, $–(CH_2)_5$-, $–(CH_2)_6$-, –CH=CH-CH=CH-, $–Z_4$-CH=CH-, -CH=CH-Z_4-, $–Z_4$-CH_2-CH_2-CH_2-, -CH_2-Z_4-CH_2-CH_2-, -CH_2-CH_2-Z_4-CH_2-, -CH_2-CH_2-CH_2-Z_4-, -Z_4-CH_2-CH_2-, -CH_2-Z_4-CH_2- or -CH_2-CH_2-Z_4-, with Z_4 being O, S, SO_2 or NR^{11} wherein R^{11} is hydrogen, C_{1-6}alkyl, benzyl or C_{1-6}alkyloxycarbonyl; and wherein each bivalent radical is optionally substituted with C_{1-6}alkyl.

or R^3 and R^4 may be taken together to form a bivalent radical of formula -CH=CH-CH=CH- or $–CH_2$-CH_2-CH_2-CH_2- ;

aryl represents phenyl or naphthyl optionally substituted with one or more substituents selected from halo, hydroxy, C_{1-6}alkyl, C_{1-6}alkyloxy, phenyloxy, nitro, amino, thio, C_{1-6}alkylthio, haloC_{1-6}alkyl, polyhaloC_{1-6}alkyl, polyhaloC_{1-6}alkyloxy, hydroxyC_{1-6}alkyl, C_{1-6}alkyloxyC_{1-6}alkyl, aminoC_{1-6}alkyl, mono-or di(C_{1-6}alkyl)amino; mono-or di(C_{1-6}alkyl)aminoC_{1-6}alkyl, cyano, -CO-R^{12}, -CO-OR^{13}, -$NR^{13}SO_2R^{12}$, -SO_2-$NR^{13}R^{14}$, -NR^{13}C(O)R^{12}, -C(O)$NR^{13}R^{14}$, -SOR^{12}, -SO_2R^{12}; wherein each R^{12}, R^{13} and R^{14} independently represent C_{1-6}alkyl; cycloC_{3-6}alkyl; phenyl; phenyl substituted with halo, hydroxy, C_{1-6}alkyl, C_{1-6}alkyloxy, haloC_{1-6}alkyl, polyhaloC_{1-6}alkyl, furanyl, thienyl, pyrrolyl, imidazolyl, thiazolyl or oxazolyl;

and when the R^1-C(=X) moiety is linked to another position than the 7 or 8 position, then said 7 and 8 position may be substituted with R^{15} and R^{16} wherein either one or both of R^{15} and R^{16} represents C_{1-6}alkyl, C_{1-6}alkyloxy or R^{15} and R^{16} taken together may form a bivalent radical of formula -CH=CH-CH=CH-;

(b) administering the radiolabelled compound to biological material; and

(c) detecting the emissions from the radiolabelled compound.

32. (Previously Presented) The method of claim 31 wherein the compound is administered to said biological material *in vivo*.

33. (Previously Presented) The method of claim 31 wherein the compound is administered to said biological material *in vitro*.

34. (Currently amended) The method of claim 31 wherein the emissions are detected using Single Photon Emission ~~Computered~~Computed Tomography or Positron Emission Tomography.

35. (Previously Presented) The method of claim 31 wherein the biological material is a tissue sample, plasma fluid, body fluid, body part from a warm-blooded animal, or organ from a warm-blooded animal.